

REMARKS

Summary Of The Office Action & Formalities

Claims 1-8 are all the claims pending in the application. By this Amendment, Applicants are amending claim 1 and 6, and adding new claims 9-17.

Applicants thank the Examiner for acknowledging their claim to foreign priority and for confirming that the certified copy of the priority document was received by the USPTO.

The Examiner has not initialed all of the references listed on form PTO-1449 submitted with the Information Disclosure Statements of March 22, 2000. Specifically, the Examiner has not initialed those references for which only an English language abstract was provided without the full text of the Japanese reference. Applicants are submitting herewith a new Information Disclosure Statement with full copies of the foregoing Japanese references and kindly request the Examiner to initial by the listed references.

Claims 1-8 are rejected under 35 U.S.C. § 1.112, second paragraph, as being indefinite for the reasons set forth at page 2 of the Office Action. Applicants' foregoing amendments are believed to overcome this rejection. These amendments are not intended nor considered to be narrowing amendments surrendering any equivalents under Festo.

The prior art rejections are summarized as follows:

1. Claims 1, 2, and 5-8 are rejected under 35 U.S.C. § 102(b) as being anticipated by
Campion (EP 0 831 070/USP 5,979,189).¹

2. Claims 3-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Campion.

Applicants respectfully traverse.

Claim Rejection - 35 U.S.C. § 102

In rejecting claims 1, 2, and 5-8, the grounds of rejection state that

The first 17 lines of the claim are directed to the apparatus that the preform is in; Campion clearly shows this. The requirement of the method begin at line 18. Col. 3, line 55 to col. 4 line 1, disclose the preform being cut. The preform is made of layers of glass, see col. 2, 37-44. The cutting of the preform reduces the length of at least one layer; this is the "interposing" of a one-ended reduction.

It is noted that there is no conjunction separating the "during..." phrase of lines 19-20 from the "while..." phrase of lines 21-29. Nor is there any implied conjunction. Thus of all possible/reasonable conjunctions, "or" is the broadest; therefore, the broadest reasonable interpretation of the claim requires interpreting an "or" between the two clauses (i.e. after "layers" of line 20). Campion meets the "during..." clause. The Campion length reduction occurs during a pass, because the burner is moved (i.e. passed) to the location of the cut. In Applicant's invention the reduction occurs at the end of a pass also. As to the starting from one of the intermediate layers, the Campion cutting starts with all the layers at substantially the same time, because the layers cannot be pulled separately (see col. 3, lines 55-56).

¹ Although the Examiner initially states that claims 1-8 are rejected under 35 U.S.C. § 102(b), the body of the rejection appears to only apply to claims 1, 2, and 5-8.

As to lines 29-34: all of the thicknesses of the Campion preform are limited by the level set by the layer deposited immediately prior to the one-ended reduction because the preform thicknesses are kept constant during the reduction - except for where the preform is cut. Specifically, feature 9 is the one end piece, the opposite end of the preform is the other end piece and any remaining section of the preform in the limited length preform zone.

Office Action at page 3.

As stated in Applicants' specification, the method of separating a preform according to the invention of Campion involves the steps of: (1) heating and drawing the preform to achieve a reduced diameter segment of the material 10, (2) passing a torch over the preform from the end closest the segment 10 to eliminate deposited silica, and (3) returning the torch to the place of separation 9 to rapidly complete separation. Therefore, Campion discloses performing the separation in two steps, between which a glazing stage is interposed. See Applicants' specification at page 2 and Campion '189 at column 3, line 55 to column 4, lines 2. As explained in Applicants' specification, the above method is not suitable for large diameter preforms.

Applicants' invention, on the other hand, teaches that fewer concentric layers of silica should be deposited on the preform in the zone where the preform is to be separated. As a result, the preform has a reduced diameter portion defining a step near one end of the preform. Specifically, claim 1 recites a one-ended reduction in the length of an intermediate layer:

said method interposing a one-ended reduction in the length of at least one layer, during a pass and starting from one new layer that is an intermediate layer, . . . said one-ended reduction in layer length leading to a limitation of the thickness of material deposited on one of the end-pieces and on a limited-length preform zone that

is longitudinally adjacent to said end-piece, at the level set by the layer deposited immediately prior to said one-ended reduction, and

wherein the one ended reduction in the length is greater than a reduction in length of an immediate prior layer from a second to the immediate prior layer.

Applicants respectfully submit that the method disclosed in Campion clearly does not teach or suggest this step of depositing fewer layers to create the recited one-ended reduction in length. Rather, as noted above, the reduced diameter segment 10 in Campion is created by heating and drawing the preform. Such steps clearly do not reduce the number of layers over the recited length. Therefore, claim 1 is believed to be allowable over Campion, and the Examiner is kindly requested to reconsider and withdraw the rejection of this claim.

Claims 2 and 5-8 are also believed to be allowable over Campion at least by reason of their respective dependencies.

Applicants further note that, with respect to claim 6, the Examiner has not pointed to any explicit or inherent disclosure supporting the allegation that in the preform of Campion, the reduction of layer length satisfies a non-linear relation. Nevertheless, to emphasize the distinction, Applicants are amending claim 6 to further recite that this non-linear relation exists prior to a first drawing of the preform for separation.

Claim Rejection - 35 U.S.C. § 103

In rejecting claims 3 and 4, the Examiner takes the position that subject matter of these claims would have been obvious depending upon how much fiber was desired, and thus the size of the preform made. Applicants respectfully disagree.

First, Applicants respectfully submit that claims 3 and 4 are allowable at least by reason of their respective dependencies.

Furthermore, Applicants submit that the limitations recited in claims 3 and 4 are directed to steps that reflect preferred dimensions for achieving proper separation using the one-ended reduction in layer length according to the present invention that would not have been obvious to one skilled in the art.

That is, with respect to claim 3, it would not have been obvious to have the diameter of the preform, above which the one-ended reduction in layer length is performed, to be greater than the end-piece and less than 70 mm. Applicants note that this diameter corresponds to the neck portion of the preform, and not the largest diameter of the completed preform.

With respect to claim 4, the recited dimensions create a stepped portion that is clearly not disclosed or suggested in the applied art. The range of 10 mm to 200 mm corresponds to length of the neck portion that serves to facilitate separation in accordance with the present invention. If anything, Campion teaches away from having a neck portion of any length, since the reference appears to teach adding layers in the conventional manner that results in a uniform tapered (i.e., conical) end prior to drawing and separation.

New Claims

For additional claim coverage merited by the same scope of this invention, Applicants are adding new claims 9 - 17. Claims 9 - 17 are believed to be allowable because these claims require a particular neck portion not disclosed in the prior art.

U.S. Application No. 09/532,968
Amendment Under 35 U.S.C. § 1.111

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

Claim 1. (Amended) A method of [manufacturing or] building up[, i.e. "overcladding",] an optical fiber preform in an installation provided with means enabling a preform held horizontally at [its] ends of the preform between two mounting points by supporting the ends of the preform with end pieces for rotation about an axis of the preform and for relative movement in a direction parallel to the axis of the preform [end-pieces to be rotated axially and to be moved relatively in translation], said installation also being provided with heater means for heating the preform by means of a plasma torch, which heater means [are] is disposed radially relative to said preform and [are] is associated with material supply means, so as to enable the preform to be manufactured in successive passes corresponding to the preform and the torch being displaced relative to each other, certain ones of the passes carried out with [with or without] material being supplied and certain other ones of the passes being carried out without material being supplied, so that each successive pass leads [, these displacements therefore leading either] to a new layer of material being deposited on the preform when material is supplied and [, or] to the most recent layer deposited being glazed when material is not supplied, said method interposing a one-ended reduction in the length of at least one layer, during a pass and starting from [one of the intermediate layers] one new layer that is an intermediate layer, while a succession of concentric

layers of material are being deposited on the preform in a manner such that the respective lengths of the layers, which lengths are determined by the [preform/torch] relative displacements between the torch and the preform, are progressively shortened as a result of a progressive reduction in the lengths of the displacements, so that the thickness of deposited material that covers the preform and a portion of each of the end-pieces decreases uniformly towards the ends, said one-ended reduction in layer length leading to a limitation of the thickness of material deposited on one of the end-pieces and on a limited-length preform zone that is longitudinally adjacent to said end-piece, at the level set by the layer deposited immediately prior to said one-ended reduction, and

wherein the one ended reduction in the length is greater than a reduction in length of an immediate prior layer from a second to the immediate prior layer.

Claim 6 (Amended). A method according to claim 1, providing a reduction in layer length that satisfies a non-linear decreasing relationship, at least beyond the layer whose length is reduced at one end and that is deposited first, and at that end of the preform at which said reduction is provided, and wherein the non-linear decreasing relationship is satisfied prior to a first drawing of the preform for separation from one of the end-pieces.

Claims 9-17 are added as new claims.